WHAT IS CLAIMED IS:

1. An object velocity measuring apparatus for measuring an object velocity in a photographic field from a plurality of photographic frames made up of a plurality of pixels, the object velocity measuring apparatus comprising:

an object area extracting unit configured to extract, as an object area, a set of pixels from which an object has been sensed over at least M (M < N) of N successive frames including the present frame;

a center-of-gravity computing unit configured to calculate the center-of-gravity position coordinates of the extracted object area in the photographic field; and

a velocity computing unit configured to calculate the object velocity from the movement of the calculated center-of-gravity position coordinates between different frames.

2. The object velocity measuring apparatus according to claim 1, wherein the center-of-gravity computing unit, when the object area corresponding to the same object is separated into a plurality of segments, calculates the weighted mean of the center-of-gravity position coordinates of each segment, using the area of each segment in the photographic field as a weight, and determines the center-of-gravity position coordinates of the object area in the photographic

field.

3. The object velocity measuring apparatus according to claim 1, wherein the object area extracting unit varies at least one of N and M adaptively according to at least one of the object velocity, the size of the object area in the photographic field, and the frame rate of the photographic frames.

4. The object velocity measuring apparatus according to claim 1, further comprising a binarizing unit configured to binarize each pixel in the photographic frames on the basis of a specified threshold value related to its luminance.

5. The object velocity measuring apparatus according to claim 1, wherein

the photographic frames are photographed with an imaging device installed on a movable body, and

the velocity computing unit multiplies the object velocity by the distance between the imaging device and the object, thereby calculating a relative velocity between the imaging device and the object.

6. The object velocity measuring apparatus according to claim 1, wherein

the photographic frames are photographed with an imaging device fixed in position, and

the velocity computing unit multiplies the object velocity by the distance between the imaging device and

the object, thereby calculating a relative velocity between the imaging device and the object.

7. An object velocity measuring method of measuring an object velocity in a photographic field from a plurality of photographic frames made up of a plurality of pixels, the object velocity measuring method comprising:

a first step of extracting, as an object area, a set of pixels from which an object has been sensed over at least M (M < N) of N successive frames including the present frame;

a second step of calculating the center-of-gravity position coordinates of the extracted object area in the photographic field; and

a third step of calculating the object velocity from the movement of the calculated center-of-gravity position coordinates between different frames.

8. The object velocity measuring method according to claim 7, wherein the second step is a step which, when the object area corresponding to the same object is separated into a plurality of segments, calculates the weighted mean of the center-of-gravity position coordinates of each segment, using the area of each segment in the photographic field as a weight, and determines the center-of-gravity position coordinates of the object area in the photographic field.

9. The object velocity measuring method according to claim 7, further comprising a fourth step of varying at least one of N and M adaptively according to at least one of the object velocity, the size of the object area in the photographic field, and the frame rate of the photographic frames.

10. The object velocity measuring method according to claim 7, further comprising a fifth step of binarizing each pixel in the photographic frames on the basis of a specified threshold value related to its luminance.

11. The object velocity measuring method according to claim 7, wherein

the photographic frames are photographed with an imaging device installed on a movable body, and

the object velocity measuring method further comprises a sixth step of multiplying the object velocity by the distance between the imaging device and the object, thereby calculating a relative velocity between the imaging device and the object.

12. The object velocity measuring method according to claim 7, wherein

the photographic frames are photographed with an imaging device fixed in position, and

the object velocity measuring method further comprises a seventh step of multiplying the object velocity by the distance between the imaging device and

the object, thereby calculating a relative velocity between the imaging device and the object.